Assessing the Emergence of a Multidrug Resistant *Salmonella* Serotype Newport Using PFGE and Plasmid Profiling (1996-2000).

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Seventeen human state and local public health laboratories participated in the National Antimicrobial Resistance Monitoring System (NARMS) by submitting every tenth non-typhoidal *Salmonella* to CDC for antimicrobial susceptibility testing through 2000. Minimum inhibitory concentrations were determined for 17 antimicrobial agents using a semi-automated broth microdilution system (Sensititre®). Of *Salmonella* submitted to NARMS the proportion of S. Newport increased from 4% in 1996 to 9% in 2000. 399 S. Newport isolates were submitted between 1996-2000, and the rate of multidrug resistance (MDR; decreased susceptibility to $\geq$ 5 antimicrobials) rose from 5.8% in 1996 to 23% in 2000. 398 samples were subtyped by Pulsed Field Gel Electrophoresis (PFGE). Plasmid profiling was performed on all 50 MDR and 20 pansusceptible strains. Phage typing was performed on 27 MDR and 51 pansusceptible isolates. The rise in MDR among NARMS S. Newport was largely attributable to a cluster of highly related MDR strains that first appeared at the end of 1998. The most common *Xba*I PFGE pattern represented 23 of the 35 MDR isolates in 1999 and 2000. With one exception, MDR isolates were either phage type 14 or 17. MDR isolates carried at least one large plasmid (75-140 kb). Pansusceptible strains did not harbor plasmids. Plasmid transformation showed that MDR *S*. Newport strains transferred resistance to a number of antimicrobial agents including ampicillin, amoxicillin/clavulanate, chloramphenicol, sulfamethoxazole, tetracycline, and third-generation cephalosporins. There is strong correlation among PFGE types, resistance types, phage types and the presence of large MDR plasmid(s) among MDR *S*. Newport.

Suggested citation:

Bird M, Whichard J, Ribot E, Stevenson J, Ahmed R, Barrett T. Assessing the Emergence of a Multidrug Resistant *Salmonella* Serotype Newport Using PFGE and Plasmid Profiling (1996-2000). National Antimicrobial Resistance Monitoring System. Annual Scientific Meeting. November 19-22, 2002. Hilton Head, SC.